

REMARKS

Claims 1, 3-5, 8, 11, 13, and 15 stand rejected under 35 USC 103(a) as being unpatentable over U.S. Patent No. 5,591,814 to Muroi et al. view of SU 852914 to Karkozov et al. This rejection is respectfully traversed.

Claim 1 has been amended to clarify that “the dispersoid consists of (b) a compound present as solid particles in a continuous phase at ambient temperatures and having two or more primary amino groups in a molecule.” This amendment is supported, for example, by pages 8-10 of the specification which describes the benzoxazole compounds having two or more primary amino groups.

In the pending action the Examiner states in the “Response to Arguments” section starting on page 3:

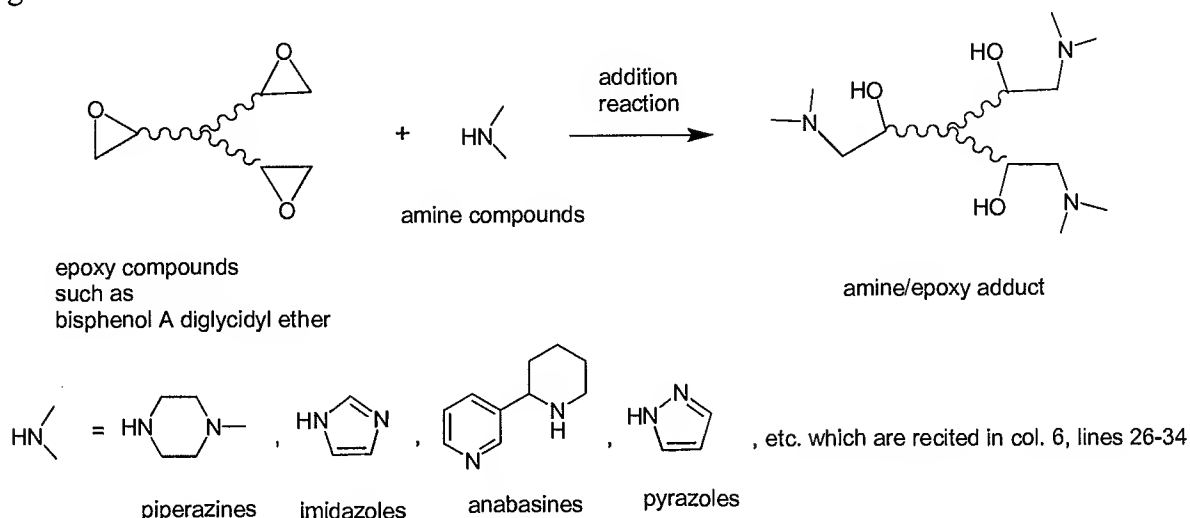
A) Applicant argues that in Muroi, that the difference between Muroi and the instant invention lies in the curing agent, Muroi uses an amine/epoxy adduct, whereas the instant invention relies on a polyaminobenzoxazole compound.

In response, the Examiner is in general agreement with applicant’s characterization of Muroi and the instant invention. **However, the Examiner disagrees with the statement, “accordingly the obtained adduct particles would not contain amino hydrogens as in the claimed curing agent”.** The present claim language does not limit the amines, and it is the examiner’s position that the applicant is reading unrecited specification details into the claims (elements such as the amines being primary amines or terminal amines as exemplified in chemical formulas I-XIII). **Claim 1 requires the compound to have two or more amino groups, which Muroi clearly shows describes (e.g. piperazine, imidazoles, etc.; col. 6, lines 25- 34).** Furthermore, the dispersoid comprises (b), which does not exclude the presence of **additional components such as the epoxy adducts of Muroi.**

... The difference between Muroi and the instant invention is that in the instant invention the latent initiator comprises an aromatic amine compound having a benzoxazole structure, whereas **the latent initiators of Muroi comprise aromatic rings having two or more amino groups**, but devoid of a benzoxazole structure. **Karkozov teaches benzoxazole initiators as latent initiators** for epoxy resins that improve pot life, raise the heat resistance of hardened materials and are beneficial in their non-volatility. ...

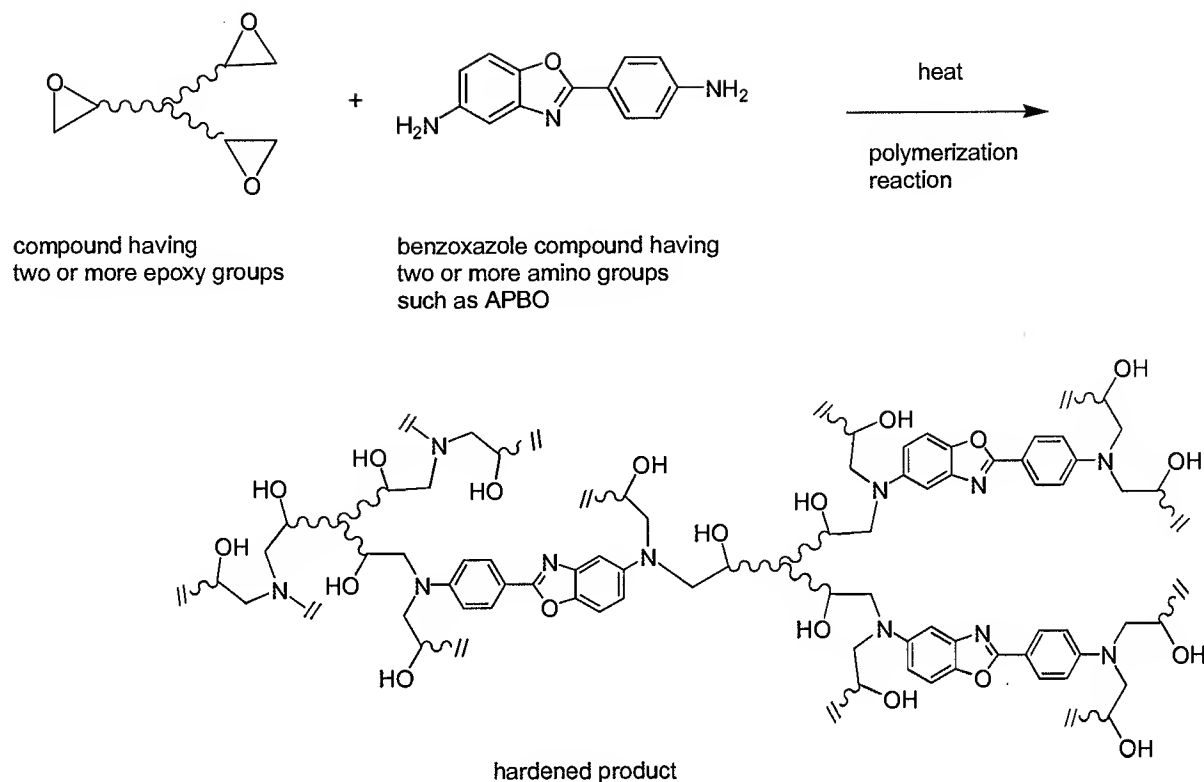
In Muroi, the amine/epoxy adduct is a reaction product obtained by an addition reaction of an amine compound (e.g. piperazines, imidazoles, etc., Muroi col. 6, lines 25- 34) and an epoxy

compound (e.g. bisphenol A diglycidyl ether, etc., Muroi col. 6, lines 36- 48) as shown in the following scheme:



Thus, the addition reaction converts the amine compound to the amine/epoxy adduct by reacting an amino group with an epoxy group of the epoxy compound. Therefore, in Muroi the latent initiators no longer include the amine compound itself. Moreover, the amine compound is a starting material for the amine/epoxy adduct, so the amine compound is not an additional component to be added to the amine/epoxy adduct. In addition, the hydrogen atoms of the amino group of the amine compound have been exhausted by the addition reaction with the epoxy groups, so the amine/epoxy adduct no longer contains amino hydrogens for further addition-reacting with an epoxy group.

As explained above, claim 1 has been amended to include a curing agent that consists of a poly(primary amino)benzoxazole compound, and the primary amino groups addition-react with a compound having two or more epoxy groups for polymerization as shown in the following scheme:



Karkozov discloses Examples 1-3 wherein 5-amino-2-(p-aminophenyl)benzoxazole (APBO) is added to an epoxy resin heated to 140°C for immediate dissolution (see Karkozov page 3, lines 17-20). Accordingly, Karkozov does not disclose APBO as a latent hardener —only as a non-latent hardener.

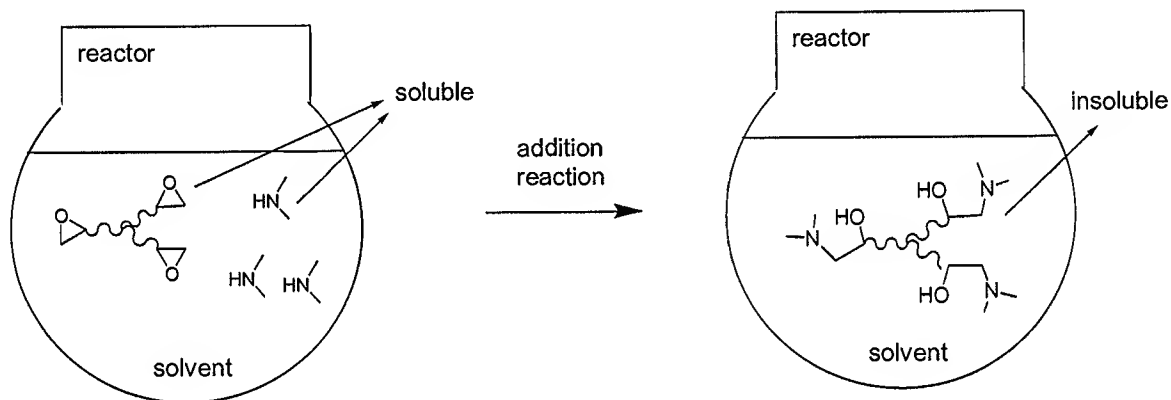
Accordingly, there would be no motivation for persons of ordinary skill in the art to replace the amine/epoxy compound of Muroi with APBO as a latent curing agent, since Karkozov does not disclose or suggest utilizing APBO as a latent hardener, and since Muroi's curing agent is not a poly(primary amino)benzoxazole compound as in the claimed composition.

In the pending action, pages 6 and 7, the Examiner also states:

E) Applicant's argument concerning the solubility of Muroi's initiator particles during the process of making is not persuasive for two reasons: 1) the instant claimed invention is not concerned with the process of making the latent initiator particles; and 2) the initiator particles of Muroi, once prepared, form a dispersion of particles in the epoxy resin, until the latent curing agent is activated (above the melting point of the particles; Muroi 4:64-5:3); likewise, the ground APBO particles of Karkozov are insoluble in epoxy resin until heated (Karkozov

page 3).

As explained above, the curing agent of Muroi is the amine/epoxy adduct, not the amine compound. The amine compound is a starting material for obtaining the amine/epoxy adduct. Muroi states "It is also important to select a solvent which can dissolve the amine compounds and the epoxy compound as the starting materials but can precipitate the adduct in the form of particles without dissolution" (col. 7, lines 19-22). This allows for fine spherical particles of the curing agent, amine/epoxy adduct to be obtained (see col. 4, lines 49-57). The addition reaction is shown as follows.



Since the APBO of Karkozov requires a very high temperature of 140 °C for dissolution, it would not be suitable as a starting material of the amine/epoxy adduct according to Muroi.

Since the cited art fails to disclose or suggest the claimed dispersoid that "consists of (b) a compound present as solid particles in a continuous phase at ambient temperatures and having two or more primary amino groups in a molecule, and the compound having two or more amino groups in a molecule is an aromatic amine compound having a benzoxazole structure," the rejections of claims 1, 3-5, 8, 11, 13 and 15 should be withdrawn.

In view of the above, each of the claims in this application is in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone

conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event that the transmittal form is separated from this document and the Patent and Trademark Office determines that an extension and/or other relief (such as payment of a fee under 37 C.F.R. § 1.17 (p)) is required, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petition and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing **Docket No. 358362011200**.

Dated: February 10, 2011

Respectfully submitted,

By 

Jonathan Bockman

Registration No. 45,640
MORRISON & FOERSTER LLP
1650 Tysons Blvd, Suite 400
McLean, Virginia 22102
(703) 760-7769